

### *The Pending Claims*

Claims 1, 4-21, 23 and 28-49 are currently pending. Claims 4-21 have been withdrawn from consideration by the Office as being directed to a non-elected species. Claims 1 and 23 are directed to a method for the therapeutic treatment of cancer in an animal, which method comprises administering to an animal at risk for developing a cancer or having cancer due to a genetic defect in the *abl*, *bcl2*, or *p53* gene a nitroxide or a prodrug thereof. Claims 28 and 29 are directed to a method for the prophylactic or therapeutic treatment of cancer in an animal, which method comprises administering to an animal at risk for developing a cancer or having cancer due to an inherited genetic defect. Claims 30-49 are directed to a method for the prophylactic treatment of cancer in an animal, which method comprises administering to an animal at risk for developing a cancer or having cancer due a nitroxide or a prodrug thereof.

### *Amendments to the Specification and Claims*

The specification has been amended to correct obvious typographical errors with respect to the *abl* and *bcl2* genes. These terms, when used in the art, are generally written using lower case. In addition, the *abl* gene was amended to correct an obvious typographical error. The correct name of the gene is well known in the art as evidenced by the enclosed abstracts (e.g., Mamet et al., *Biochem. Med. Metab. Biol.*, 1994, 52(1): 53-57; and Jackson, *EMBO J*, 1989, 8(2): 449-456).

Claim 1 has been amended and claims 2, 3, 22 and 24-27 have been canceled to point out more particularly and claim more distinctly the present invention. In view of the cancellation of claim 3, the dependencies of claims 4, 6, 8, 12, 14 and 21 have been amended. In view of the cancellation of claim 22, the dependency of claim 23 has been amended. Claim 1 has been amended to recite that the cancer to be therapeutically treated is due to a genetic defect in the *abl*, *bcl2*, or *p53* gene. In addition, claim 1 has been amended to include the elements of claim 3. This amendment is supported by the specification at, for example, page 7, lines 19-23. Claims 28 and 29 have been added and are supported by the specification at, for example, page 6, lines 10-22 and page 7, line 24, through page 10, line 14. Claims 30-49 have been added and are supported by originally filed claims 1-21. No new matter has been added by way of these amendments. The precise changes to the claims and the pending claims, as amended, are set forth on attachments hereto.

*Summary of the Office Action*

In view of the Appeal Brief filed June 17, 2002, the Office has reopened prosecution on the basis of new grounds for rejection. Claims 1-3, 22, 24 and 26 have been rejected under 35 U.S.C. § 112, first paragraph, for alleged lack of written description. Claims 1-3 and 22-27 have been rejected under 35 U.S.C. § 102(e), as allegedly anticipated by Bernstein (U.S. Patent 5,840,734). Finally, the Office has rejected claims 1 and 2 under 35 U.S.C. § 102(e), as allegedly anticipated by Wang et al. (*Anti-Cancer Drug Design*, 1993, 8, 193-202). Reconsideration of the pending claims is respectfully requested.

*Discussion of the Section 112, first paragraph, Rejection*

*Claims 1-3*

The Office has rejected claims 1-3 (claims 2 and 3 have been canceled) under Section 112, first paragraph, as lacking written description. In particular, the Office contends that the specification does not provide an adequate representation regarding which types of cancers are susceptible to nitroxide or a prodrug thereof. In an effort to advance prosecution and not in acquiescence of the rejection, claim 1 has been amended to recite that the cancer to be therapeutically treated is due to a genetic defect in the *abl*, *bcl2* or *p53* gene (as supported by the specification at, for example, page 7, lines 19-23, and Examples 1 and 2). Specific cancers caused by a genetic defect in the *abl*, *bcl2*, or *p53* gene were known in the art at the time the patent application to which the subject patent application claims priority (U.S. Application No. 60/047,724) was filed, i.e., May 27, 1997. For example, Hollstein et al., *Science* 253: 49-53 (1991) teaches that *p53* mutations are common to human cancers, including cancers of the colon, lung, esophagus, breast, liver, brain, reticuloendothelial tissue, and hematopoietic tissues. Furthermore, de Klein et al., *Nature* 300: 765-767 (1982) discloses that the *abl* gene is translocated to chromosome 22 in patients with chronic myelocytic leukaemia. Moreover, Kadin, *Curr. Opin. Oncol.* 6: 456-463 (1994) discloses that the *bcl-2* and *p53* genes are defective in Hodgkin's disease. The abstracts of these references are attached herewith.

Claims 30-49 recite the prophylactic treatment of cancer by administering a nitroxide or prodrug thereof. Nitroxides have been shown to protect cells and animals against the untoward acute effects of short-term exposure to lethal doses of free radicals and oxidative species, such as superoxide, hydrogen peroxide, hydroxyl radicals, and hydroperoxides, by functioning as antioxidants (see, U.S. Patent 5,462,946, incorporated by reference and page 2, lines 24-28, of the instant specification). Therefore, claims 30-

49 are directed towards prophylactically treating cancer that is susceptible to prevention (e.g., delay of onset, slowing of progression, etc.) with a nitroxide or prodrug thereof. In other words, the cancer susceptible to prophylactic treatment with a nitroxide or prodrug thereof is any cancer that generates free radicals and oxidative species. The specific type of cancer that is prophylactically treated does not matter as long as free radicals and/or oxidative species are produced; the mechanism of action should be the same.

In view of the above, the rejection of claims 1-3 under Section 112, first paragraph, cannot stand. Accordingly, Applicants request the withdrawal of this rejection.

*Claims 22, 24 and 26*

The Office has rejected claims 22, 24 and 26 under Section 112, first paragraph, as lacking written description. This rejection is believed to be moot in view of the cancellation of claims 22, 24 and 26.

*Discussion of the Section 102(e) Rejections*

The Office has rejected claims 1-3 and 22-27 (claims 2, 3, 22 and 24-27 have been canceled) under Section 102(e) as anticipated by Bernstein. This rejection is rendered moot in view of the Declaration under 37 C.F.R. § 1.131 of James B. Mitchell, attached herewith, which establishes that Applicants conceived of and reduced to practice the invention prior to the publication date of Bernstein. Accordingly, Applicants request the withdrawal of this rejection.

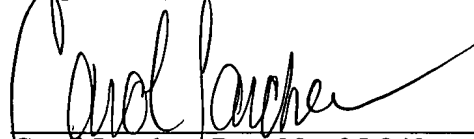
The Office has rejected claims 1 and 2 under Section 102(e) as anticipated by Wang et al. Applicants submit that Wang et al. does not qualify as prior art under Section 102(e). Therefore, Applicants request the withdrawal of this rejection. In this regard, Applicants point out that claim 2 has been canceled and that the limitations of claim 3 have been introduced into claim 1. Since claim 3 was not subject to this rejection, Wang et al. cannot be said to anticipate claim 1 under any other subsection of Section 102.

*Conclusion*

The application is considered to be in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

In re Appln. of Mitchell et al.  
Application No. 09/424,519

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Carol Larcher", written over a horizontal line.

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Date: February 18, 2003

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CERTIFICATE OF MAILING

I hereby certify that this AMENDMENT AND RESPONSE TO OFFICE ACTION (along with any documents referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.

Date: February 18, 2003

Kathleen M. Grant

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